

Amendments to the Claims:

Please cancel claims 30-56, without prejudice or disclaimer.

Please amend the claims as shown below. This Listing of Claims will replace prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for producing a probe carrier comprising:
 - (1) a step of preparing 100 or more kinds of ~~[[a]]~~ purified probes ~~probe~~;
 - (2) a step of obtaining probe information on each ~~[[the]]~~ purified probe;
 - (3) a step of judging "good" or "not good" quality of each purified probe according to the obtained probe information and a predetermined criterion;
 - (4) a step of obtaining a probe of which quality is "good" in case of the purified probe of which quality is judged as "not good";
 - (5) a step of individually dissolving each purified probe judged as "good" in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (2), at a predetermined concentration and storing each obtained probe solution in an individual storing container;
 - (6) a step of transferring each probe solution stored in said storing container to another container for containing the probe solutions, respectively, equipped in an apparatus for deposition onto the carrier, the apparatus comprising 100 or more ink jet nozzles and the containers for containing the probe solutions, corresponding to the number of ink jet nozzles;
 - (7) a step of applying a surface treatment to the carrier for fixing the probe;
 - (8) a step of depositing said probe solution onto a treated surface of said carrier by a method including the following steps, thereby forming a plurality of mutually independent probe fixation areas;

(8-1) a step of executing an analytical inspection on the carrier subjected to said surface treatment and judging “good” or “not good” state of said carrier according to the result of said analytical inspection and a predetermined criterion, wherein the predetermined criterion comprises a measurement of a contact angle;

(8-2) a step of depositing ~~at least one selected from~~ said plural probe solutions onto the carrier judged as “good” by using the apparatus for deposition such that so as to form a probe deposition areas ~~so as to form a~~ [[area]] independent for each probe solution are arranged as spots of liquid droplets;

(8-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which said probe deposition area is formed, and judging “good” or “not good” state of said deposition according the result of said inspection and a predetermined criterion;

(8-4) a step of executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(8-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

(8-6) a step of judging “good” or “not good” state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

2. (Currently Amended) A method for producing a probe carrier comprising:

(a) a step of designing 100 or more ~~plural~~ kinds of probes for detecting a target substance;

(b) a step of synthesizing each of the designed ~~plural~~ probes;

(c) a step of individually purifying each of the synthesized ~~plural~~ probes;

(d) a step of obtaining probe information on each purified probe;

(e) a step of judging “good” or “not good” state of synthesis and purification in each purified probe according to the obtained probe information and a predetermined criterion;

(f) a step of repeating the foregoing steps (b) to (e) on the purified probe of which state of synthesis and purification is judged as “not good”, thereby obtaining “good” state of synthesis and purification in all the purified probes;

(g) a step of individually dissolving each purified probe judged as “good” in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (d), in a predetermined concentration and storing each obtained probe solution in an individual storing container;

(h) a step of transferring each probe solution in the storing container to another container for containing the probe solutions, respectively, equipped in an apparatus for deposition onto the carrier, the apparatus comprising 100 or more ink jet nozzles and the containers for containing the probe solutions, corresponding to the number of the ink jet nozzles;

(i) a step of applying a surface treatment for fixing the probe to the carrier;

(j) a step of depositing the probe solution onto a treated surface of the carrier by a method including following steps, thereby forming a plurality of mutually independent probe fixation areas;

(j-1) a step of executing an analytical inspection on the carrier for judging “good” or “not good” state of the carrier according to the result of the analytical inspection and a predetermined criterion, wherein the predetermined criterion comprises a measurement of a contact angle;

(j-2) a step of depositing ~~at least one selected from the plural~~ probe solutions onto the carrier judged as “good” by using the apparatus for deposition such that so as to form a probe deposition areas ~~[[area]]~~ independent for each probe solution are arranged as spots of liquid droplets;

(j-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is

formed, and judging “good” or “not good” state of the deposition according the result of the inspection and a predetermined criterion;

(j-4) a step of executing, on the carrier having the probe deposition area judges as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(j-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier; and

(j-6) a step of judging “good” or “not good” state of the produced probe carrier according to the result of the analytical inspection and a predetermined criterion.

3. (Original) A producing method according to claim 1, wherein the probe is a nucleic acid.

4. (Withdrawn) A producing method according to claim 1, wherein the probe information is a weight of said probe.

5. (Original) A producing method according to claim 1, wherein the probe information is a purity of said probe.

6. (Withdrawn) A producing method according to claim 1, wherein the probe information is base sequence information of a nucleic acid.

7. (Original) A producing method according to claim 1, wherein a fixation of the probe to the carrier is executed by a covalent bonding.

8. (Original) A producing method according to claim 1, wherein means for spotting the probe is an apparatus equipped with single or plural ink jet nozzles.

9. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 1, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; and apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

10. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 1, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for

executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

11. (Original) A quality assurance method for a probe carrier, wherein a producing method according to claim 1 is employed to execute an analytical inspection on any one or all of a probe in a probe solution prior to the deposition onto a carrier, a surface treated carrier, a probe deposition area after the deposition of a probe solution, and a probe fixed to a carrier after the deposition of a probe solution, thereby assuring a quality of a probe chip.

12. (Currently Amended) A quality assurance method according to claim 11, wherein the probe chip, for which quality is assured, is a probe carrier produced by

- (1) a step of preparing 100 or more kinds of [[a]] purified probe;
- (2) a step of obtaining probe information on each [[the]] purified probe;
- (3) a step of judging "good" or "not good" quality of each purified probe according to the obtained probe information and a predetermined criterion;
- (4) a step of obtaining a probe of which quality is "good" in case of the purified probe of which quality is judged as "not good";
- (5) a step of individually dissolving each purified probe judged as "good" in a solvent for ejection to a carrier, based on at least a part of the probe information obtained in (2), at a predetermined concentration and storing each obtained probe solution in an individual storing container;
- (6) a step of transferring each probe solution stored in said storing container to another container for containing the probe solutions, respectively, equipped in an apparatus for deposition onto the carrier, the apparatus comprising 100 or more ink jet nozzles and the containers for containing the probe solutions, corresponding to the number of the ink jet nozzles;
- (7) a step of applying a surface treatment to the carrier for fixing the probe;

(8) a step of depositing said probe solution onto a treated surface of said carrier by a method including the following steps, thereby forming a plurality of mutually independent probe fixation areas;

(8-1) a step of executing an analytical inspection on the carrier subjected to said surface treatment and judging "good" or "not good" state of said carrier according to the result of said analytical inspection and a predetermined criterion;

(8-2) a step of depositing ~~at least one selected from~~ said plural probe solutions onto the carrier judged as "good" by using the apparatus for deposition such that so as to form a probe deposition areas ~~[[area]]~~ independent for each probe solution are arranged as spots of liquid droplets;

(8-3) a step of executing an inspection, concerning a formed state of the probe deposition area, on the carrier on which said probe deposition area is formed, and judging "good" or "not good" state of said deposition according the result of said inspection and a predetermined criterion;

(8-4) a step of executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

(8-5) a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

(8-6) a step of judging "good" or "not good" state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

13. (Withdrawn) A probe carrier produced by a producing method according to claim 1.

14. (Withdrawn) A probe carrier of which quality is assured by a quality assurance method according to claim 11.

15. (Currently Amended) A method for producing a probe carrier having plural probes fixed on a surface of a carrier, comprising:

a step of executing an analytical inspection on a surface of said carrier and judging "good" or "not good" state of said carrier according to the result of said analytical inspection and a predetermined criterion, wherein the predetermined criterion comprises a measurement of a contact angle;

a step of depositing ~~at least one selected from~~ plural probe solutions onto said carrier judged as "good" by using an apparatus for deposition, the apparatus comprising 100 or more ink jet nozzles and containers for containing the probe solutions, corresponding to the number of ink jet nozzles, such that so as to form a probe deposition areas [[are]] independent for each probe solution are arranged as spots of liquid droplets;

a step of executing an inspection, concerning a formed state of said probe deposition area, on the carrier on which said probe deposition area is formed, and judging "good" or "not good" state of said deposition according the result of said inspection and a predetermined criterion;

a step of executing, on the carrier having said probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier;

a step of executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on said carrier; and

a step of judging "good" or "not good" state of the produced probe carrier according to the result of said analytical inspection and a predetermined criterion.

16. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 2, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier

subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

17. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 3, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

18. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 4, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each

purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

19. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 5, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

20. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 6, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier,

each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

21. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 7, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

22. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 8, comprising: an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and

purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

23. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 2, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging “good” or “not good” state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as “good”; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging “good” or “not good” state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

24. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 3, comprising: a synthesis

apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

25. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 4, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

26. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 5, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

27. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 6, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the

surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

28. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 7, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state, concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as "good", a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

29. (Withdrawn) A producing system to be employed in a method for producing a probe carrier according to claim 8, comprising: a synthesis apparatus for synthesizing plural design probes; a purification apparatus for individually purifying the synthesized plural probes; an analysis apparatus for obtaining the probe information of each purified probe; an inspection apparatus for judging "good" or "not good" state of synthesis and purification of each purified probe; an apparatus for depositing, to the carrier, each probe solution supplied from a storing container individually storing each purified probe solution judged as "good"; an analysis apparatus for the carrier subjected to said surface treatment; an inspection apparatus for judging "good" or "not good" state,

concerning a formed state of the probe deposition area, on the carrier on which the probe deposition area is formed; an apparatus for executing, on the carrier having the probe deposition area judged as “good”, a fixation of the probe to the surface of the carrier thereby obtaining a probe carrier; and an apparatus for executing an analytical inspection on the probe in at least one of the plural probe fixation areas constituted of probes fixed on the carrier.

30-56. (Cancelled)